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**Patent Application for:**

**METHOD TO ELECTRONICALLY TRACK  
PERSONAL CREDIT INFORMATION**

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# METHOD TO ELECTRONICALLY TRACK PERSONAL CREDIT INFORMATION

## CROSS REFERENCE TO RELATED DOCUMENTS

This application is related to and claims priority of U.S. provisional patent application serial no. 60/210,115, filed June 7, 2000 in the name of Brian M. Siegel for "Method to Electronically Identify and Distribute Personal Credit Card Information", which is hereby incorporated by reference.

## FIELD OF THE INVENTION

This invention relates generally to the field of electronic commerce. More particularly, in one embodiment, this invention relates to a method to electronically track personal credit information accumulated by automatically capturing information from online transactions.

## BACKGROUND OF THE INVENTION

Many loyalty point programs require use of a special credit card or presentation of a particular membership number at the time of a transaction in order to credit the customer with loyalty points. It thus becomes difficult for a consumer to fully realize all of the benefits of loyalty point programs. As an

1 example, airline points often can be credited for rental car use, certain purchases  
2 and hotel stays. However, in order to obtain credit for these purchases, the user  
3 must take special steps at the time of purchase.

4 In other environments, a particular credit card is required to obtain loyalty  
5 points. Generally, such a program is designed to promote brand loyalty among  
6 customers. However, the requirement that a particular credit card be used may  
7 inhibit some consumers from participating in a particular loyalty program. Most  
8 corporations promoting brand loyalty programs are interested in obtaining the  
9 consumer's brand loyalty even if the consumer chooses not to use a preferred  
10 payment method. However, it is currently difficult to track and maintain a  
11 customer's loyalty points if not tied to a particular type of credit card so transactions  
12 can be readily monitored. It would be advantageous to provide a method to track  
13 online purchases without regard for the type of credit card used for providing  
14 benefits under loyalty programs.

15 In addition to the above, it is noted that Internet commerce is becoming a  
16 more convenient source of purchases for many consumers. In the more historically  
17 conventional "brick and mortar" world, the consumer makes a purchase at a retail  
18 location by tendering cash, check or credit card and is provided with the  
19 merchandise on the spot along with purchase documentation. This can be used  
20 to track the consumer's purchases manually if desired using any suitable  
21 mechanism. However, as consumers become more dependent on the Internet for  
22 purchases, it may become more difficult to track purchases when the consumer  
23 has multiple outstanding purchases, possibly on multiple outstanding credit cards.  
24 In addition, as the consumer visits new web sites to make purchases, he or she is  
25 often required to enter the same type of information (shipping address, credit card  
26 number, etc.) repeatedly. It would be advantageous to provide a method to simplify  
27 as well as easily track and manage online purchases without regard for the type of  
28 credit card used or web site visited.

## **SUMMARY OF THE INVENTION**

The present invention relates generally to electronic commerce. Objects, advantages and features of the invention will become apparent to those skilled in the art upon consideration of the following detailed description of the invention.

In one embodiment consistent with the present invention, a method of tracking online credit card usage by a user of an Internet communication device, includes: monitoring entries made on the Internet communication device; detecting instances of a credit card transaction in the entries made on the Internet communication device; and upon detecting an instance of a credit card transaction, storing information describing the credit card transaction in a database accessible by the Internet communication device.

A computer system, consistent with embodiments of the present invention, includes a processor having a central processing unit, an input device and memory. A storage device is coupled to the processor, and stores a database. The processor is programmed to perform the programmed steps of tracking online credit card usage by a user of the computer system comprising the steps of: monitoring entries made by a user using the input device; detecting instances of a credit card transaction in the entries made by the user; and upon detecting an instance of a credit card transaction, storing information describing the credit card transaction in the database.

A method of managing loyalty points, consistent with embodiments of the present invention includes: storing transactions on a computer database; granting access to the computer database to a loyalty point provider; and receiving loyalty points based on the data stored in the computer database.

A method of managing loyalty points, consistent with embodiments of the present invention includes: receiving access to a computer database of transactions made by a user; and granting loyalty points based on the data stored in the computer database.

In another embodiment consistent with the present invention, a storage medium stores a set of computer instructions which, when executed on a

1 computer, carry out a process including: monitoring entries made by a user using  
2 an input device; detecting instances of a credit card transaction in the entries made  
3 by the user; and upon detecting an instance of a credit card transaction, storing  
4 information describing the credit card transaction in a database.

5 A computer system, according to another exemplary embodiment includes  
6 a processor having a central processing unit, an input device and memory. The  
7 processor is programmed to perform the programmed steps of: receiving access  
8 to a computer database of transactions made by a user; carrying out a query of the  
9 computer database to determine purchases that qualify for loyalty points; and  
10 granting loyalty points based on the data stored in the computer database.

11 A storage medium, consistent with an embodiment of the present invention  
12 stores a set of computer instructions which, when executed on a computer, carry  
13 out a process including obtaining access to a computer database of transactions  
14 made by a user; carrying out a query of the computer database to determine  
15 purchases that qualify for loyalty points; and granting loyalty points based on the  
16 data stored in the computer database.

17 The above summaries are intended to illustrate exemplary embodiments of  
18 the invention, which will be best understood in conjunction with the detailed  
19 description to follow, and are not intended to limit the scope of the appended  
20 claims.

21

### 22 BRIEF DESCRIPTION OF THE DRAWINGS

23 The features of the invention believed to be novel are set forth with  
24 particularity in the appended claims. The invention itself however, both as to  
25 organization and method of operation, together with objects and advantages  
26 thereof, may be best understood by reference to the following detailed description  
27 of the invention, which describes certain exemplary embodiments of the invention,  
28 taken in conjunction with the accompanying drawings in which:

1           **FIGURE 1** is a simplified block diagram of a typical electronic commerce  
2 system suitable for use in carrying out an embodiment consistent with the present  
3 invention.

4           **FIGURE 2** is a flow chart describing one exemplary embodiment of a  
5 process consistent with the present invention.

6           **FIGURE 3** is a block diagram of an electronic commerce system using a  
7 network connection to the Internet suitable for use in carrying out another  
8 embodiment consistent with the present invention.

9           **FIGURE 4** is a flow chart describing an exemplary embodiment of a process  
10 for establishing profiles and processing queries consistent with the present  
11 invention.

12           **FIGURE 5** is a flow chart describing another exemplary embodiment of a  
13 process for carrying out a loyalty point or creditor transaction consistent with the  
14 present invention.

15           **FIGURE 6** is a block diagram showing an exemplary computer arrangement  
16 suitable for carrying out certain processes consistent with the present invention.

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### DETAILED DESCRIPTION OF THE INVENTION

20           While this invention is susceptible of embodiment in many different forms,  
21 there is shown in the drawings and will herein be described in detail specific  
22 embodiments, with the understanding that the present disclosure is to be  
23 considered as an example of the principles of the invention and not intended to limit  
24 the invention to the specific embodiments shown and described. In the description  
25 below, like reference numerals are used to describe the same, similar or  
26 corresponding parts in the several views of the drawings.

27           Referring now to **FIGURE 1**, a system 100 suitable for carrying out an  
28 embodiment of the present invention is illustrated. In this system, a computer such  
29 as an IBM compatible personal computer 110 (or other computing device) can be

1 used to carry out a process according to the present invention. In this exemplary  
2 embodiment, computer 110 includes a keyboard 120 and possibly a mouse or  
3 other pointing device 130. Computer 110 also includes a mass storage device 140  
4 such as a hard disc drive. Mass storage device 140 should be suitable for storing  
5 a database in a known manner.

6 Computer 110 is coupled to the Internet 150 via a communication link 160.  
7 Communication link 160 may include any suitable communication link for  
8 communication with the Internet. Examples of such communication links include  
9 dial-up modem telephone line connections, DSL (Digital Subscriber Line)  
10 connections, ISDN (Integrated Services Digital Network) and cable modem  
11 connections, to name a few example. An Electronic Commerce Server 170 is also  
12 coupled to the Internet 150 via a communication link 180. In accordance with  
13 known techniques, a user of the computer 110 can link to E-Commerce Server 170  
14 via the Internet 150 in order to carry out various transactions. For example, a user  
15 may wish to carry out a credit card transaction via Internet 150 to E-Commerce  
16 Server 170 in order to make a purchase of a book, a compact disc or other goods  
17 or services. In so doing, the E-Commerce Server 170 provides for the user of  
18 computer 110 to view catalog pages, indexes, etc. in order to identify the  
19 merchandise to be purchased.

20 Once an item to be purchased is identified, the user may, for example,  
21 electronically deposit the merchandise in an electronic shopping cart (or other  
22 shopping metaphor) to accumulate a list of items to be purchased.

23 When the user of computer 110 is prepared to make a purchase, the E-Commerce  
24 Server 170 conventionally transmits a web page, such as an XML enabled web  
25 page, to computer 110 in order to gather payment and shipping information from  
26 the user. The user can then fill in the form with credit card information, shipping  
27 information, etc. in order to consummate the purchase.

28 In accordance with an embodiment of the present invention, rather than  
29 having the user type all of the relevant information to consummate the purchase,  
30 computer system 110 recognizes the entry of credit card information from a stored

1 profile provided by the user during setup of a computer program. Thus, the  
2 keyboard entries are intercepted by a so-called sidcar application that recognizes  
3 that a credit card number is being entered. The technology to implement such an  
4 application is well known and need not be repeated here. Upon recognizing that  
5 a credit card number is being entered into a web page, the sidcar application then  
6 determines that an online purchase is to be made. The sidcar application then  
7 automatically populates the fields of the web page order form to the extent possible  
8 as well as enters information in a database stored in mass storage device 140 with  
9 information relating to the transaction. This database can then be utilized for a  
10 number of useful database functions by the user of computer system 110.  
11 According to one embodiment, the user of computer system 110 can call up the  
12 database to determine on a regular basis the amount of purchases made with one  
13 or many credit cards registered with the application. In other embodiments, the  
14 database can be utilized to grant access to third parties such as creditors and  
15 loyalty point providers to permit additional benefits to the user.

16 In order to utilize the sidcar application of the present invention, the user  
17 first creates a profile containing various information such as name, address, E-mail  
18 address, credit card number, expiration date, etc. which provides the application  
19 with the ability to first recognize entry of credit card information and second,  
20 automatically populate fields in an electronic order form. Once this information is  
21 entered, process 200 as shown in **FIGURE 2**, is carried out. This process starts at  
22 210 where the application is enabled in the background as computer 110 carries  
23 on normal operations. At 220, the application monitors data entered by the user  
24 and determines upon detection of matching credit card information that an online  
25 transaction is being carried out. If a credit card number is detected at 230, the  
26 application first asks the user to verify and approve that a transaction is being made  
27 and is to be entered into the database stored in 140 at 240. If the user is, for  
28 example, simply typing a letter to the credit card company regarding an erroneous  
29 bill and as part of that letter is typing the credit card number, the user will wish to  
30 disapprove carrying the process 200 any further and control returns to 220 to await

1 the next instance of a credit card number entry. If however, the user is, in fact,  
2 filling out an online order form and a credit card number is detected, the user will  
3 likely approve or verify continuation of the process at 240. In this case, the web  
4 page containing the online order form is automatically populated at 250 with as  
5 much information as the application can provide.

6 Owing to the many variations in field names, full auto population may not be  
7 possible without taking special measures to register particular field names  
8 associated with particular web sites. For example, there are many variations in  
9 even simple name fields such as, for example: name, first name, firstname,  
10 customer name, etc. The present invention can search for all obvious variations in  
11 such fields in a known manner and make a best effort attempt to auto-populate the  
12 web page. Any unfilled fields may be manually entered by the user at 150. After  
13 auto-populating the web page and returning it to the E-Commerce Server 170, the  
14 transaction is saved to a database stored on mass storage device 140 at 260. The  
15 transaction can be entered with as much information as the user may wish to save.  
16 For example, the saving of the transaction can include extracting item descriptions,  
17 item numbers, prices and other information from the order entry web page. In  
18 addition, the database transaction can be time stamped with a time and date of the  
19 transaction as well as a user name (in order to provide for multiple users using the  
20 same credit card), and a full web address for the order entry page. In other  
21 embodiments, the entire web page can be captured to a file which is indexed in the  
22 database for future reference.

23 Once this information is saved to the database, the user can carry out any  
24 number of database functions on the information at 270. By way of example, and  
25 not by way of limitation, the database functions can include simply viewing the  
26 transactions, providing totals of expenditures, totaling loyalty points or any number  
27 of database functions. Control then returns to 220 to monitor data input for the next  
28 credit card number entry. As data entry is being monitored at 220, control can also  
29 pass to 280 when credit card numbers are not detected to monitor for a command

1 at 280 generated by the user to retrieve data from the database stored on 140. If  
2 such a command is not received control passes to 220.

3 If a command to retrieve data is received, the user can enter any number of  
4 data retrieval commands to show various displays and reports from the database  
5 at 290 before returning to 220. Those skilled in the art will appreciate that the  
6 process shown as 200 can be varied in many ways, including modification of the  
7 time sequence, without departing from the present invention. For example,  
8 database functions 270 can be carried out only when the user desires to retrieve  
9 information at 280. The order of various steps may be modified and rearranged in  
10 various ways and the auto- population process of 250 can be omitted altogether in  
11 certain embodiments. The embodiment described above provides a convenient  
12 mechanism for a user to track credit card usage over the Internet. However, a  
13 system under the users control that tracks Internet purchases can become an even  
14 more powerful tool for the user to maximize convenience in paying bills as well as  
15 maximize and open up possibilities for capitalizing on loyalty point programs if the  
16 user can provide limited access to the database by certain third parties. In system  
17 100, this can generally be accommodated with an always on Internet connection  
18 if communication link 160 provides such a connection. In another embodiment,  
19 polling techniques can be utilized by computer system 110 to provide regular  
20 access to third parties by polling the third parties sites. In other embodiments, the  
21 user of computer system 110 can manually address particular third party sites to  
22 take advantage of further features of the present invention.

23 Referring now to **FIGURE 3**, a user can advantageously provide access to  
24 the database described herein by connection to a local area network (LAN) 310  
25 having an always on network server 320 with a connection to the Internet and an  
26 associated mass storage device 330. In this embodiment the associated mass  
27 storage device 330 can contain the database (or a selected portion of the database  
28 as desired by the user) which can not only be populated during Electronic  
29 Commerce transactions with various Electronic Commerce servers such as 170 but

1 can also be made selectively available via connection 340 to a loyalty point provider  
2 350 or to a creditor 360 via connection 370.

3 In this embodiment, shown as 300, the database stored in 330 also includes  
4 a profile of the loyalty point provider 350 and creditor 360. The profile defines the  
5 parameters under which the user of computer 110 will permit access to the  
6 database stored on 330. For example, in the case of creditor 360, which might be,  
7 for example, an electric utility company, the user may determine from the profile  
8 established for creditor 360 that he will permit the creditor 360 to charge up to \$150  
9 per month for payment of his electric bill. For creditors such as an electric  
10 company which might have a budget plan establishing a monthly payment, can be  
11 utilized to satisfy the creditors charges in full on a monthly basis.

12 In another embodiment, loyalty points (for example, programs similar to  
13 frequent flyer miles, hotel rewards, etc.) can be provided in new ways.  
14 Traditionally, credit cards might supply loyalty points based on transactions using  
15 a particular credit card. An example of such a program is the Sony Credit Card  
16 which provides Sony points which can be used to purchase Sony products and  
17 services. In another example, airline miles are routinely credited to an account  
18 based upon travel with a particular airline as well as selected hotel  
19 accommodations or rental car accommodations and perhaps other purchases  
20 provided the user takes appropriate steps at each transaction to consummate the  
21 awarding of the loyalty points.

22 In accordance with the present invention, the loyalty point provider 350 can  
23 be provided access to the database on 330 in order to open the database, search  
24 for purchases which qualify for loyalty points, credit the users account with the  
25 loyalty points and then close the connection to the database. This expands the  
26 user's ability to readily capitalize upon loyalty points for loyalty programs that might  
27 not automatically credit all types of purchases. For example, a manufacturer or  
28 reseller may wish to provide points for purchases of particular brands of  
29 merchandise, without regard for what particular credit card is used. Thus, if the  
30 manufacturer of electronic products wishes to grant rewards for customer loyalty

1 without requiring affiliation of a particular credit card for providing the loyalty points,  
2 system 300 can be utilized to give the loyalty point provider the ability to scan the  
3 database in 330 to obtain information on purchases which might qualify for the  
4 loyalty points. In this manner, the user is not restrained to a particular credit card  
5 in order to obtain loyalty points. By purchasing a particular brand of products over  
6 the Internet either at designated sites or simply by brand, the user can thus be  
7 awarded loyalty points for brand loyalty.

8 Operation of one embodiment of the current application is illustrated as  
9 process 400 of **FIGURE 4**. This process starts at 405 after which the user enters  
10 a data entry phase to enter a name, address, shipping information, credit card  
11 number, expiration date and other fields which might be necessary to capture the  
12 credit card number and auto populate the web page fields at 410. At 415, the user  
13 can select the type of information to be captured from the web site or otherwise  
14 surrounding the circumstances of the purchase, for example web page address,  
15 date and time stamping, item number, item name or description, purchase price,  
16 shipping, tax, etc. In the case of creditors, the user can create a creditor profile at  
17 420 which may include information to assure that the creditor contact with the  
18 database involves only a secure transaction. The creditor profile created at 420  
19 may also include various limitations such as maximum number of transactions in  
20 one month, maximum dollar amount of transactions in one month, etc.

21 In accordance with a similar process, the user can create a profile of a  
22 loyalty points provider at 425 to provide the necessary information for crediting a  
23 loyalty points account with loyalty points. Other types of profiles may be created  
24 at 430 to permit others to either use the account (for example, a child at school in  
25 a remote location may be given access to the credit card account but the user may  
26 wish to track transactions separately. Or, a child may be given a particular  
27 allowance in the form of credit card dollars that can be spent online on a monthly  
28 basis so that the parent has a mechanism for monitoring the expenditures of a  
29 child.)

30 Once all of the profiles are created, the program is enabled and awaits a



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1 query from a remote third party. The term query as used herein can include an  
2 actual database query or any other transaction that might be carried out with the  
3 database including database entries in the case of creditors and loyalty point  
4 providers as required to carry out the authorized transactions. If a query is not  
5 received at 435, the sidecar application waits until a query is received at which  
6 point control passes to 440 where the query is verified against the profile to assure  
7 compliance with the users defined privileges for the third party. If the profile is not  
8 verified at 445, the query is rejected at 450 and control returns to 435 to await the  
9 next query. In rejecting the query, any number of steps can be taken as will occur  
10 to those skilled in the art. Such steps might include logging the attempted query  
11 or sending a rejection message to the source of the query. In the event the query  
12 is verified at 445, the query is processed within the profile limits at 460 before  
13 returning control to 435.

14 Processing the query at 460 might include carrying out an online transaction  
15 as in the case of permitting a creditor to make a charge against a credit card or  
16 may permit a loyalty point provider to examine the database and make entries in  
17 the database to signify purchases that qualify for loyalty points. Other variations  
18 will occur to those skilled in the art.

19 Referring now to **FIGURE 5**, the process used by a third party (either creditor  
20 or loyalty point provider) to access the database is illustrated as process 500.  
21 Process 500 is broken into two parts that share a number of similar steps and  
22 therefore is being shown in a single flow chart. The process starts at 505. At 510  
23 the third party contacts the file server 320 via the Internet and communication link  
24 335. The third party then transmits a request to open the database at 520. Starting  
25 at 530, the process takes the path to the left for the creditor and the path to the right  
26 for a loyalty point provider. In the case of the creditor, if the request is not approved  
27 the process ends at 535. If, on the other hand, the request to open the database  
28 at 520 is approved at 530 for a creditor, control passes to 540 where a credit card  
29 transaction is requested (such as a monthly payment of a fixed amount of money.)  
30 If the transaction is approved at 550, the transaction is then entered into the

1 database and a transaction with the credit card company is approved for the credit  
2 card transaction. In the event the transaction is not approved at 550, the process  
3 again ends at 535.

4 In the event the request at 520 is from a loyalty point provider, and is  
5 approved at 530, the process on the right side of the flow chart of **FIGURE 5** is  
6 carried out. The loyalty point provider carries out a search of the database at 570  
7 to identify purchases which qualify for loyalty points. At 580 the loyalty point  
8 provider credits the users account with the points identified and at 590 the users  
9 database is updated before the process ends at 535. Once the loyalty point  
10 provider has access to the consumer's database, marketing efforts can be made  
11 more effective by use of consumer profiles to better target consumer's interests.

12 The processes described can be carried out with any device having access  
13 to the Internet for carrying out transactions provided it has access to an appropriate  
14 storage medium for storing the database. In general, any computer system such  
15 as system 600 of **FIGURE 6** can be utilized for implementing the present invention.  
16 Such systems may be embodied in a personal computer, a personal digital  
17 assistant, a cellular telephone, a network appliance or other Internet enabled  
18 devices. System 600 includes a central processing unit 610 connected via a  
19 communication bus 615 to Random Access Memory 620 as well as non-volatile  
20 memory 630. An output mechanism such as a CRT or flat panel video screen as  
21 well as a LCD display can be utilized in the setup and transaction process. An  
22 input device 650 such as a keyboard, mouse, touch pad, stylus system, etc. can  
23 be utilized to input data. A storage device 660 either remote or directly connected  
24 to bus 615 can be utilized to store the database. In a network enabled system, a  
25 network connection 670 is provided; otherwise, another mechanism for connection  
26 to the Internet is provided. Those skilled in the art will recognize that system 600  
27 is a very general description of any programmed processor device suitable for  
28 carrying out the process of the present invention. Many variations will occur to  
29 those skilled in the art.

1 *etc* While the present invention has been described specifically in terms of credit  
2 card transactions, with minor modifications, the present invention can also be  
3 utilized to deal with transactions with a checking account or other bank saving and  
4 loan, brokerage house or other type of account. Moreover, many variations in the  
5 present invention will occur to those skilled in the art such as incorporation of  
6 features to permit limitations on credit card use such that when limits are exceeded  
7 or met, the sidecar application interrupts the transaction in some manner such as  
8 supplying an established void credit card number or prohibiting the transaction in  
9 any other known way.

10  
11 Those skilled in the art will recognize that the present invention has been  
12 described in terms of exemplary embodiments based upon use of a programmed  
13 processor. However, the invention should not be so limited, since the present  
14 invention could be implemented using hardware component equivalents such as  
15 special purpose hardware and/or dedicated processors which are equivalents to  
16 the invention as described and claimed. Similarly, general purpose computers,  
17 microprocessor based computers, micro-controllers, optical computers, analog  
18 computers, dedicated processors and/or dedicated hard wired logic may be used  
19 to construct alternative equivalent embodiments of the present invention.

20 Those skilled in the art will appreciate that the program steps used to  
21 implement the embodiments described above can be implemented and stored  
22 using disc storage as well as other forms of storage including Read Only Memory  
23 (ROM) devices, Random Access Memory (RAM) devices; optical storage elements,  
24 magnetic storage elements, magneto-optical storage elements, flash memory, core  
25 memory and/or other equivalent storage technologies without departing from the  
26 present invention. Such alternative storage devices that store the database and  
27 program instructions should be considered equivalents.

28 The present invention is preferably implemented using a programmed  
29 processor executing programming instructions that are broadly described above in  
30 flow chart form. However, those skilled in the art will appreciate that the processes